

**United States Department of the Interior**  
**Bureau of Land Management**

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**Environmental Assessment**

**DOI-BLM-CA-D080-2021-0014-EA**

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**June 30, 2021**

**Calico Early Man Site Health and Human Safety Remedies**

**Location:** San Bernardino County, California

**Barstow Field Office**



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## **1.0 Introduction**

### ***1.1 Summary of Proposed Project***

The Barstow Field Office (BAFO) of the Bureau of Land Management (BLM) proposes to secure open pits, remove falling and dangerous structures, and restore important cultural features, if approved, at Calico Early Man Site (CEMS). In September 2016, public safety concerns and vandalism caused the BLM to institute a temporary closure of the CEMS and which has caused the site to remain closed as vandalism and further degradation of the site has steadily increased the threats to human health and safety. The BAFO is now proposing to eliminate the threats to human health and safety so that CEMS can reopen to visitation by the general public. As per 40 CFR 1501.5(a), the BAFO is preparing an Environmental Assessment (EA) to assess the impacts of proposed changes to the CEMS. This EA follows the regulations in the National Environmental Policy Act (NEPA), to analyze the impacts of the proposed action.

### ***1.2 Project Location***

CEMS is approximately four miles east of the community of Yermo, California and 15 miles northeast of Barstow, California within unincorporated San Bernardino County and fully within the BLM Barstow Field Office management area (Figure 1, Regional Location). The proposed project area size is approximately 100-acres of land within the Calico Early Man Site Area of Critical Environmental Concern (ACEC) as designated by the California Desert Conservation Area (CDCA) Plan. The legal description is the northwest quarter of Section 22, Township 10 North, Range 2 East in the San Bernardino Baseline and Meridian, U.S. Geological Survey (USGS) 7.5-minute Yermo, CA quadrangle map (1970).

### ***1.3 Purpose and Need***

The need for the proposed action is to remediate the present and growing human health and safety issues present at CEMS, a BLM managed area. With the loss of funding for an on-site caretaker and loss of volunteers from the Friends of Calico, the CEMS and its components have become an attractive nuisance for vandalism and a safety hazard for the public. Over the past four years BLM Law Enforcement have responded to several thefts and vandalism activities at this site. This coupled with dilapidation and collapse of several large features and structures at the site has created an overall unsafe area. The purpose for the Proposed Action is to mitigate the safety hazard at the site and re-open the CEMS to the general public and manage the site under the regulations of the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S. Code Chapter 35).

### ***1.4 Decision to be Made***

The Barstow Field Manager is the official responsible for the analysis of the environmental impacts of the Proposed Action, and whether to approve the public health and safety remedies as proposed, not at all, or to some other extent.

### ***1.5 Land Use Plan Conformance***

The proposed action is in conformance with (43 CFR 1601.5-3, BLM 1601.08) the CDCA Plan (1980), as

amended by the Desert Renewable Energy Conservation Plan (DRECP). DRECP designates CEMS as part of the Mojave and Silurian Valley California Desert National Conservation Lands (CDNCL). The proposed action is in compliance with the CDCA Plan, as amended by the DRECP.

The CDCA Plan designates the CEMS as an Area of Critical Environmental Concern (ACEC). The CDNCL and the ACEC designation related to the CEMS for a “internationally recognized site for its values to scientific research into the question of Early Man in the Western Hemisphere.” (DRECP, 2016 Appendix B, p. 415) The overarching goal of the Calico Early Man Site ACEC is to “manage the cultural resource values associated with the Calico Site for the purpose of scientific research into questions dealing with human occupation and settlement of the Western Hemisphere. To provide and maintain appropriate recreational opportunities for the general public at the Calico Site that serve to increase understanding and appreciation of human prehistory and archaeological techniques.” (DRECP, 2016 Appendix B, p. 415). The ACEC Management Plan for the Calico Early Man Site, was approved in 1984. The Management Plan provides for the management of the internationally recognized cultural and scientific values related to the site. The Proposed Action is in conformance with the 1984 Management Plan but cannot continue many of the actions included in the plan as it relied heavily on the cooperation and help of the Friends of Calico, who no longer exists.

## *1.6 Relationship to Statutes, Regulations, Other NEPA Documents*

This EA was prepared in accordance with NEPA, as amended, procedures and is in compliance with all applicable laws and regulations subsequently passed, including the Council on Environmental Quality (CEQ) regulations (40 CFR, Parts 1500-1508) and guidelines; U.S. Department of Interior (USDI) Regulations for Implementation of NEPA (43 CFR Part 46); USDI BLM NEPA Handbook, H-1790-1 (BLM 2008); and the Department Manual (DM) Part 516.

This EA was also prepared in accordance with the following regulations and guidance policies: Endangered Species (ESA) Act, as amended (ESA) (16 U.S.C. § 1531 et seq.); FLPMA; National Historic Preservation Act of 1966, as amended; Environmental Justice (Executive Order 12898, 1994); Clean Air Act of 1970, as amended; and the Clean Water Act of 1972, as amended. ESA Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) would be conducted for the proposed project.

## *1.7 Issues Identified for Analysis*

The BLM Barstow Field Office held an internal interdisciplinary team scoping meeting February 17, 2021 to discuss the proposed action to remedy the threats to human health and safety and identify resource concerns and possible issues. Issues identified for analysis include those that could potentially be affected by an action alternative, where analysis is necessary to determine significance of impacts, or if analysis of an issue is necessary to make a reasoned choice between alternatives.

Since the CEMS has significant historical and culture values, the BAFO will be utilizing the NEPA public outreach process to help meet the Section 106 public outreach requirements.

Bases on internal scoping, the following resources areas were determined to be potentially affected by the Proposed Action or the No Action Alternative and, therefore, have been analyzed in detail.

*Issue 1 – Air Quality*

*Issue 2 – Biology and Wildlife*

*Issue 3 – Cultural Resources*

*Issue 4 - Special Designations*

## **2.0 Alternatives**

### **2.1 Introduction**

This EA analyzes two alternatives, the Proposed Action, and a No-Action Alternative. Two Alternatives Considered but Eliminated from Detailed Analysis are:

- 1) Filling the pits that have been proposed for grate or cupola protection with expanding foam (which is a reversible treatment) and placing several feet of soil over the foam to protect it from the sun. This alternative would remove the ability of a viewer to see the pit(s); and, it would prevent access to entry without removal. This alternative was eliminated from further consideration due to the need to provide for wildlife access to the pits.
- 2) Filling the pits that have been proposed for grate or cupola protection with dirt and rock. This would eliminate the hazard but would remove the ability of a viewer to see the pit(s) and remove any access for future study without a full excavation. This alternative was eliminated due to the permanence of the action and the potential damage to the contributing factors of the site for historic research.

Elimination of these two alternatives arose from the need to protect the internationally recognized cultural and scientific values of CEMS and any remediation of the site should avoid damage to significant cultural values. Second, the need of this action is to reopen the site to the general public, the removed alternatives hamper possible further use and study and thus were rejected.

The proposed action would implement remedial actions that would eliminate human health and safety hazards, and reopen the site to visitation by the public. To meet this goal, the proposed action looks to remove structures that have become an attractive nuisance for theft and vandalism and clean up the dilapidated and fallen buildings and structures. The Proposed Action also proposes to backfill or cover open pits that are a danger to the general public. The Proposed Action analyzes all individual features with the method of remediation depending on the historic significance of each feature. No new roads will be built as the Proposed Action will use only current roads with work limited to only the CEMS site.

The No Action Alternative is a fully considered alternative and analyzed to supply a baseline for comparison of the impacts of the proposed action. The No Action Alternative would not implement the decision to safeguard the CEMS and the site would remain closed to the public as it would remain a human health and safety hazard.

## 2.2 Proposed Action Alternative

### 2.2.1 Overview

The proposed action seeks to secure dangerous and deep archaeological excavation areas and remove dangerous and unstable buildings and structures identified as human health and safety hazards. Proposed remediation actions for each feature originated from assessing both the historic significance of the feature and the potential danger to human health and safety each feature presents. Remedial actions were also evaluated as to potential impacts to other resources in the area, such as plants and animals. In general, the proposed remedies fall into four categories; removal of dilapidated and unsafe structures buildings, filling of open hazards, cover but leave open for viewing of unsafe high-walled and deep excavation features determined as historically significant resources or leave in place historically significant structures. Table 1 identifies the proposed remedy for all features within CEMS and Figure 2 provides the locations.

*Table 1- Proposed Remedies for all Features at CEMS*

Number	Feature Name/Description	Proposed Remedy
1	Commissary Building	Remove (tear down and dispose of materials)
2	Laboratory Building / Schoolhouse Building	Remove (tear down and dispose of materials)
3	Visitor Center Building	Remove (tear down and dispose of materials)
4	Restroom Building	Keep this facility
5	Metal Shipping Container (Box House)	Remove (tear down and dispose of materials)
6	Flintknapping Demonstration Area and Atlatl Demonstration Area	Remove (tear down and dispose of materials)
7	Campfire Activity Area	Remove (tear down and dispose of materials)
8	Solar Panel Structure	Remove (tear down and dispose of materials)
9	Glenn S. Gunn Memorial	Remove (tear down and dispose of materials)
10	Dave LeCocq Memorial	Remove (tear down and dispose of materials)
11	Flagpole	Replace and stabilize base
12	Dismantled Building, Propane Tank Storage Area, and Rock Lined Walkway	Remove (tear down and dispose of materials)
13	Earthen Platform	Leave in place
14	Earthen Platform	Leave in place
15	Earthen Platform	Leave in place
16	Earthen Platform	Leave in place
17	Educational Excavation Pit	Leave in place
18	Excavation Pits	Backfill pits
19	Student Campground Area	Remove (tear down and dispose of materials)
20	Recreational Vehicle Parking Area	Leave in place
21	Vehicle Parking Area	Leave in place
22	Rock Wall Site Entrance	Leave in place
23	Master Pit I	Remove roof structure; install a Cupola with cement footer along entire perimeter
24	Master Pit II	Remove roof structure, install an air grate
25	Master Pit III	Remove roof structure
26	T Trench (Trench 1)	Backfill trench
27	Excavation Pit A	Backfill pit

<b>Number</b>	<b>Feature Name/Description</b>	<b>Proposed Remedy</b>
28	Earthen Platform and Dismantled Storage Shed	Leave in place
29	Earthen Platform	Leave in place
30	Geologic Trench	Backfill trench
31	Henry's Pit	Backfill pit
32	Master Pit II Rock Stockpiles and Screening Area	Leave in place
33	Excavation Pit B	Backfill pit
34	Adult Excavation Training Area	Remove (tear down and dispose of materials)
35	Excavation Pit D	Remove frame, backfill
36	Master Pit I Rock Stockpile	Leave in place
37	Excavation Pit F	Backfill pit
38	Privy	Remove (tear down and dispose of materials)
39	Rock Wren Pit	Remove structure, backfill pit
40	Trench 3	Backfill pit
41	Control Pit II	Backfill pit
42	Unknown Excavation Area	Backfill pit
43	Control Pit I	Foam and backfill
44	Ruth DeEtte Simpson Memorial	Leave in place
45	Archaeological Sites Sign	Leave in place
46	Public Excavation Area	Backfill pit
47	Public Excavation Area, Trailer Parking Area, and Rock Lined Platform	Remove (tear down and dispose of materials)
48	Building Ruin	Remove (tear down and dispose of materials)
49	Unknown Excavation Area	Backfill pit
50	Unknown Excavation Area	Backfill pit
51	Mining Trench	Leave in place
52	First Subsurface Artifact Discovery Marker	Remove (tear down and dispose of materials)
53	Ritner's Ridge (Excavation Pits P, Q, and #5)	Backfill pit
54	Excavation Pit M	Remove fence
55	Crew Steps	Leave in place
56	Self-Guided Walking Tour	Modify and leave
57	Doris Bowers Nature Trail	Leave in place
58	Main Loop Road	Leave in place
59	Witness Points and Datums	Leave in place
60	Erosion and Site Flood Control Features	Leave in place
61	Mining Features – clay pits	Leave in place

Most of the features fall into the “Remove (tear down and dispose of materials)” category. The Proposed Action designates these items for dismantlement, removal from the site, and proper disposal to a landfill. This includes non-historically significant buildings and structures that are in a state of disrepair or have completely collapsed. The features not to be altered or remediated and remain untouched are labeled, as “Leave in place”, or “Keep this Facility”. These features pose no danger to human health and safety, are not an attractive nuisance, deliver potential benefits to a visitor at CEMS or are eligible for listing on the National Register of Historic Places and are historically significant. Where ground features represent



significant potential resources for wildlife species (i.e., nesting or roosting sites for bats) cupulas or air grates (see Figures 3-4) would be installed to retain the habitat value while protecting human health.

The rest of the terms, used in Table 1, are technical terms. Section 2.2.2 provides a detailed description of the proposed work and the technical terms used in Table 1.

### *2.2.2 Description of Work*

The Proposed Action will be performed by an independent contractor certified in appropriate safety measures, fire risk reduction, erosion prevention, invasive species spread prevention, plant and wildlife protection, micro and macro trash cleanup, and instructed to remain within designated work site. Estimated time on site is 3-4 weeks and the proposed work will be performed during the cold season when endangered desert tortoises are least active, and the work is less likely to affect them.

Equipment used on site will be 4x4 pickups, a flatbed trailer for hauling equipment and supplies, dump truck(s) for debris removal, front loader, or excavator to help remove debris and load it into the dump truck, and for backfilling features; power tools to include chainsaw, cement mixer, welding equipment, and an assortment of hand tools. Fuel supply is via portable containers or a tank mounted onto a pickup. A spill kit will be available for use just in case of a spill incident.

Access is readily available to the items identified for remedy or removal. Equipment and personnel will utilize existing roads or pathways. All paths and roads are on site at the CEMS and within the disturbed area of the CEMS. Equipment will enter CEMS through established roads and workers will be instructed to stay on designated roads and paths. Entry to the back part of the CEMS will use a previously disturbed path. Some roads and paths may need maintenance prior to use or during work as the area is prone to natural washouts. This will only occur if a washout occurs which prevents equipment from passing safely.

#### **Backfill**

The Proposed Action seeks to backfill features 18, 26, 27, 30, 31, 33, 35, 37, 40-43, 46, 49, 50, and 53. Backfilling is the most permanent means of blocking all access to a hazardous feature. The features would be filled entirely with backfill, waste rock material, and/or native stone that are located near each feature and furthermore may be covered with topsoil material to facilitate revegetation (if required). Earthen material, including soil and stone, would be selected to blend in with the surrounding landscape. The material used would be free of cultural resources, non-native plant species and their seeds, and contamination. Fill material is compacted to eliminate or minimize surface subsidence as required, depending on the selected material. This compaction is useful with small diameter and relatively "shallow" pits or trenches or when the feature bottom is not far from the surface.

Some features may be filled manually with the use of a shovel. This method may be desirable for smaller features, when a feature does not have nearby vehicular and/or heavy equipment access route, or if there are biological or cultural resources that are hard to avoid with a vehicle or heavy equipment.

For larger features with vehicular access, earth moving equipment including tractors, excavators, and trucks with grading equipment attached may be used. To the extent possible all biological and cultural resources identified during the site assessment would be avoided during the project and recommended mitigation measures enacted.

In a typical backfill operation, a piece of heavy equipment excavates material from a borrow site and transports and dumps the fill material into the feature. For this project excavators with smooth tracks and loaders with large tires will be used to push materials directly, excavators or front loaders would be used to push material directly into a feature (trench or pit). Where the feature is located in an area of having potentially high sensitivity to surface disturbance, an excavator would be used to place material directly into the feature to be closed.

The borrow site will be located near the opening where the rock and soil has been deposited. This operation would result in further reclamation of the site to the natural state by reusing the excavated material. Re-contouring is usually done at the same time the mine feature has been backfilled, which involves shaping the land to give it more natural features and addressing concerns in geology, hydrology, wildlife habitat, and visual considerations. The final grading and contouring would shape the terrain to prevent mining waste from being transported off-site by wind or water erosion.

### **Polyurethane Foam (PUF) Plug**

The proposed foam for Control Pit I, feature 43, is a Polyurethane Foam (PUF) Plug. The PUF Plugs addresses the sensitivity of the site. If a feature cannot be backfilled safely without harming other features, then the foam PUF Plug will be the alternative. The PUF Plug can be installed in either vertical or horizontal openings or features. A PUF Plug closure over a pit consists of installing a false bottom form, installing the plug to manufacturer specifications, and backfilling over the PUF to the specified level using common fill (see Figure 6). In some instances, a cast-in-place concrete slab, rock armoring, or construction of a rock wall may be used to prevent vandalism.

The PUF plug is designed for molding and void filling applications and would be composed of hand-mixed or prepackaged polyurethane foam. The plug is either co-blown (a mixture of solvent and water) or water blown (100 percent water) for installation. The thickness of the plugs would be determined on a site-specific basis.

The typical method of installing a false bottom in a pit first involves measuring the dimensions of the feature at the location at which the plug would be installed. These measurements are transposed on a large piece of plastic lying on the ground. Mixed foam is poured onto the plastic to a cured thickness of about three inches thick. The wafer is then cut to the dimensions of the plug, inserted and placed by hand, and secured at the required plug depth. Any holes or voids are plugged with excess cured foam. Foam is poured on top or in front of the wafer and allowed to cure in stages until a formula thickness is obtained. Typically, this process takes one day to cure before the remaining portion of the feature is typically backfilled by hand with rock or loose earth to provide a fireproof barrier. Because foam is sensitive to ultraviolet radiation, it should always be armored with several feet of backfill or other covering. The foam can also be removed if there is a reason to reopen the feature for further exploration. This method typically does not require the use of mechanized earth moving equipment and allows the surface expression of the feature to be left intact.

### **Installing Cupolas and/or Grates**

The two Master Pits, features 23 and 24, would be secured by installing various combinations of cupolas and grates. Cupolas and Grates are protective remedies which allow controlled access by authorized individuals and or wildlife (See Figures 3&4). Such techniques include cupolas or grates in a variety of designs built from steel and concrete. The cupola built over the main pits will have an access door built

into the design so that authorized person(s) can gain access (See Figure 4).

Construction material and design would be recommended during the operational phase of the project and modified as necessary. Typically, these closure remedies are constructed of vandal-resistant materials, such as heavy gauge angle iron steel, 1" rebar steel, reinforced concrete, or heavy gauge expanded or steel wire mesh. These methods have a higher cost than other methods of closure such as fencing or backfill. Construction of steel structures typically requires welding. Welding can be done on-site using gasoline or diesel-powered electric welding equipment that requires vehicle access. Cutting and welding would always be conducted in areas that have been made fire safe by removing vegetation or protecting vegetation from ignition sources by wetting the worksite and the downwind area with water prior to welding. Before cutting or welding operations begin, a person would be designated as the "fire watch." During welding operation, the fire watch would be responsible for re-wetting vegetation surrounding the work site for ongoing fire prevention.

### ***2.3 No Action Alternative***

Under the No Action Alternative, the BLM would not complete the proposed remedies to safeguard the site. No actions to fill in open pits, remove collapsed buildings, or preserve historically significant structures would occur. The current state of all features would remain the same. The closure of the CEMS to the public would remain in effect as human health and safety hazard persists. BLM staff would continue to monitor the CEMS for vandalism and associated replacement of closure devices (e.g., gates, chains, locks).

## **3.0 Affected Environment and Environmental Consequences**

Chapter 3 of this document contains analysis of the environmental effects of the proposed action and its alternative under NEPA. The environmental analysis is divided into 4 sections, each corresponding with a different resource area identified during internal scoping.

CEMS is an unpopulated, arid, and desert environment located in the Calico Mountains with possible sensitive species existing in the area (See Table 2). The approximate 100 acres of the project area is highly disturbed because of the past archeology work in the area and the various existing features. Since CEMS is arid and unpopulated, many resources were easily removed from consideration as possible affected environment and will not be discussed in this EA in order to address relevant environmental impacts.

The built environment conditions center around the threats to human health and safety created by lack of a caretaker. Many of the buildings and other structures are in various states of disrepair or have collapsed due to time or intentional vandalism. The archaeological excavation pits are located in an alluvial fan with unreinforced walls. Alluvial fans are composed of rock, gravel, and sand deposited overtime as flowing water moves sediments from the nearby mountains and redeposits it downstream. This material is typically unstable and prone to collapse. Entering these pits poses a risk from falling debris originating from the wall or rim and is unsafe for any potential future evacuation. Master Pit III is shallow enough not to be considered a hazard, but the canopy over the pit has degraded. The student campground, along with the picnic tables, are either buried and dismantled or are unchained and unstable thus leaving them targets for vandalism.

### ***3.1 Air Quality***

### ***3.1.1 Affected Environment***

The proposed action is located within the Mojave Desert Air Basin (MDAB), which includes portions of San Bernardino County, Kern County, Riverside County, and Los Angeles County. The proposed action work sites are located within the boundaries of the San Bernardino County portion of the MDAB. The Mojave Desert Air Quality Management District (MDAQMD) has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. Prevailing winds in the MDAB are out of the west and southwest, due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB.

### ***3.1.2 Environmental Impacts—Proposed Action***

Annual construction emissions would not exceed the General Conformity Rule de minimis thresholds for VOC, NOx, or PM10 during construction of the proposed action.

### ***3.1.3 Cumulative Effects***

Construction and completion of remedy activities from the proposed action would not result in cumulative effect to Air Quality as effects would not exceed the De Minimums Threshold. Any reasonably foreseeable effects that have a reasonably close causal relationship to the proposed action are not expected as the proposed action is not tied to any other current known projects.

### ***3.1.4 Mitigation***

No mitigation measures are required. The project would not exceed the De Minimums Threshold.

### ***3.1.5 No Action Alternative***

No additional emissions would be generated above existing levels and no direct or indirect adverse effects to air quality would occur under the No Action Alternative. Current conditions at CEMS would remain the same.

## ***3.2 Biology and Wildlife***

### ***3.2.1 Affected Environment***

The climate of the region in the vicinity of the project area is generally arid and desert like with an average annual precipitation of roughly 4 inches. Most of the precipitation is in the form of rain, which falls mainly from December through March. Occasional flash floods occur from summer thunderstorms. Strong westerly winds are common in the spring. The mean annual wind speeds in this area are 7 to 8 miles per hour. Temperatures range from about 20 to 110 degrees Fahrenheit.

The Calico Early Man Site is a Cultural ACEC which was established to manage the cultural resource values associated with the CEMS for the purpose of scientific research into questions dealing with human occupation and settlement of the Western Hemisphere and to provide and maintain appropriate recreational opportunities for the general public at the site that serves to increase understanding and appreciation of human prehistory and archaeological. However, this ACEC also encompasses habitat which may be occupied by several plant and animal species. Based on an analysis of modeled habitat and California Natural Diversity Database information provided in the *West Mojave Route Network Project Final*

California Desert Conservation Plan Amendment and Supplemental Environmental Impact Statement for the California Desert District, April 2019, nine sensitive plant and animal species were identified as potentially occurring in the Action Area. These species are in the table below.

Table 2- Possible Sensitive Plant and Animal Species

Common Name (Scientific Name)	Status*	General Habitat Comments	Impact Potential
Creamy Blazing Star ( <i>Mentzelia tridentata</i> )	BLM	This species may be found in rocky, barren, and unvegetated communities within the project area.	May be found on site especially associated with old spoils deposition sites. Presence is not likely.
Mojave Monkeyflower ( <i>Mimulus mohavensi</i> )	BLM	This species may be found in creosote brush communities in the vicinity of the project area.	May be found on site especially associated with old spoils deposition sites. Presence is not likely.
Parish's Phacelia ( <i>Phacelia parishii</i> )	BLM	This species may be found in rocky, barren and unvegetated communities within the project area.	May be found on site especially associated with old spoils deposition sites. Presence is not likely.
Desert Bighorn Sheep ( <i>Ovis canadensis nelsoni</i> )	BLM	This species may be found in visually open, steep, and rocky mountainous terrain in the vicinity of the project area.	May be found in the area surrounding the project area but is unlikely to enter the project area.
Burrowing Owl ( <i>Athene cunicularia</i> )	BLM/BCC	This species may be found in open habitat in the vicinity of the project area.	May be found on site especially associated with old spoils deposition sites. Presence is not likely.
Golden Eagle ( <i>Aquila chrysaetos</i> )	BCC/BLM/Eagle Act	This species nests in secluded rock outcrops and ledges in the vicinity of the project area.	Nests have been reported in the vicinity of the project area, but no nests are close enough to be impacted by the proposed activities.
LeConte's Thrasher ( <i>Toxostoma lecontei</i> )	BCC/BLM	This species may nest in desert scrub community in the vicinity of the project area.	Suitable habitat for this species does not occur within the project area though suitable habitat is adjacent to the site. Impacts to this species is unlikely.
Bendires Thrasher ( <i>Toxostoma bendirei</i> )	BCC/BLM	This species may nest in desert scrub community in the	Suitable habitat for this species does not occur within the project area

		vicinity of the project area.	though suitable habitat is adjacent to the site. Impacts to this species is unlikely.
Desert Tortoise ( <i>Gopherus agassizii</i> )	FT	This species generally occurs in alluvial fans, washes, canyons, and saltbush plains, and is associated with creosote bush scrub.	This species may occur within the project area. May construct burrows in old spoils deposition sites. May burrow under old structures. Also, this species may wander into project site from adjacent quality habitat. There is a moderate potential for impacts to this species, and mitigation measures will be adopted to minimize these potential impacts.

### ***3.2.2 Environmental Impacts—Proposed Action***

Most of the 100-acre project area is highly disturbed by past human activities such as structure construction, excavation of archeological pits, and deposition of pit spoils. While highly disturbed by previous activities, some of the project area has habitat which may be suitable for wildlife. In particular, the pit spoils deposition sites have been in place for several years and habitat suitable for wildlife has developed on these sites. Heavy equipment would be used to remove old structures and to fill unsafe archeological pits and trenches. Such activity poses a potential crushing hazard to wildlife which may have moved into these structures. Noise associated with removal of structures and fill operations may disturb bird species, including potential nesting species, in the vicinity of such activities. In addition to these indirect impacts, potential wildlife habitat may be directly removed during backfilling operations which may utilize old soil pit deposits as borrow sites for fill material.

Mitigation Measures have been developed to address these potential adverse effects. Second, the proposed work will be performed during the cold season when endangered desert tortoises are least active, and the work is less likely to cause potential impacts to the desert tortoises. Work would be limited in duration (3-4 weeks) removing many long-term effects.

### ***3.2.3 Cumulative Effects***

Construction and completion of remedy activities from the proposed action would not result in cumulative effects to any biological and wildlife resources. Any reasonably foreseeable effects that have a reasonably close causal relationship to the proposed action are not expected as the proposed action is not tied to any other current known projects.

### ***3.2.4 Mitigation and Residual Impacts Cumulative Effects***

- **CEMS-BIO- 1** All contractors and work personnel shall attend a Worker Education Program prior to initiation on-site work. The program will contain information about:
  - Site-specific biological and nonbiological resources.
  - Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with requirements intended to protect site-specific biological and nonbiological resources.
  - The required project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- **CEMS-BIO- 2:** All work sites shall be surveyed by a biological monitor prior to the initiation of work which may impact wildlife habitat.
- **CEMS-BIO- 3:** All borrow sites shall be surveyed for the presence of sensitive plant and animal species prior to removal of any fill materials. All sites which will receive fill material shall be inspected prior to filling. If a sensitive plant or animal species is discovered at a borrow site, an alternative site will be established if avoidance of impacts cannot be achieved.
- **CEMS-BIO- 4:** No handling of desert tortoise is authorized except by appropriate BLM personnel.
- **CEMS-BIO- 5:** Any vehicle which has been parked shall be inspected for the presence of desert tortoise prior to being moved. If a desert tortoise is discovered, the vehicle shall not be moved until the desert tortoise moves of its own accord out of harm's way. Alternatively, the tortoise may be moved by appropriate BLM personnel.
- **CEMS-BIO- 6:** If a desert tortoise or burrow is discovered during work activities, a 100-foot no work zone shall be established around the discovery site and the BLM Field Office shall be notified immediately to determine the appropriate remedial action.
- **CEMS-BIO- 7:** Cupulas or other wildlife friendly structures shall be installed at pits that will be remediated which will allow for the safe passage of wildlife (such as bats) while excluding human entrance where appropriate. All such structures shall be designed so as to not present a trapping hazard for desert tortoise.
- **CEMS-BIO- 8:** No active bird nests shall be disturbed, including any which may be found in structures which will be removed. If an active nest is discovered, work in the vicinity shall stop and the BLM be contacted to determine appropriate remedial actions.
- **CEMS-BIO- 9:** A speed limit of 15 miles per hour shall be enforced on the work site.
- **CEMS-BIO- 10:** All trash and food wastes shall be placed in containers which prevent access by wildlife.

### **3.2.5** *No Action Alternative*

The no action alternative would not affect sensitive plant species, desert tortoise and the other species referenced in Table 2, as no alterations would be made to the project area relative to existing conditions.

### **3.3 Cultural Resources**

#### **3.3.1 Affected Environment**

The CEMS is located in the Mojave Desert, approximately 15 miles northeast of Barstow, California in the alluvial foothills of the Calico Mountains.

The BLM has identified potential human safety hazards resulting from the historical operations, which include open archaeological excavation pits that predate modern Occupational Safety and Health Administration guidelines, and concerns with potential hantavirus in rodent feces within buildings. However, in recent years, the site and specifically, its buildings, including a small museum, have become a public nuisance, with repeated break-ins and vandalization. This has resulted in the BLM temporarily closing the site.

ASM Affiliates, Inc. (ASM) under contract (No. GS10F0373N) to the United States Department of the Interior Bureau of Land Management, Barstow Field Office (BLM) undertook the Calico Early Man Site Documentation Project, San Bernardino County, California. Site P-36-XXXX/CA-SBRXXXX (awaiting site number assignment from the Archaeological Information Center), the location of the historical Calico Early Man Site excavations. Documentation of this historical resource in itself was a new avenue of research in that few, if any, archaeological excavation sites have ever been documented as historical sites.

The goal of the project was to document the now historical archaeological excavation site and to evaluate it for listing in the National Register of Historic Places (NRHP). The project was undertaken to meet the BLM's compliance requirements under Section 106 of the National Historic Preservation Act (NHPA) in support of BLM's effort to remediate human health and safety concerns at the site. The project also allows the BLM to meet their requirements to manage historic properties under Section 110 of the NHPA, to protect the quality of archaeological and historical values under Section 102 of FLPMA, and to meet BLM's goal of providing safe and secure environments for the public, employees, and public land users.

#### **3.3.2 Environmental Impacts—Proposed Action**

CEMS occupies an area of roughly 374,000 square meters, the site consisted of 58 features. A number of these were classified as built environment features: Feature 1 (Commissary Building), Feature 2 (Schoolhouse Building), Feature 3 (Visitor Center Building), Feature 4 (Restroom Building), Feature 8 (Solar Panel Platform), Feature 23 (Master Pit I—Canopy), Feature 24 (Master Pit II Roof), Feature 38 (Privy), Feature 39 (Rock Wren Pit—Canopy and Shed), and Feature 58 (Main Loop Road). These features were documented and evaluated for the NRHP by architectural historians. Evaluation efforts found that none of the built environment features possessed the qualities necessary for individual listing. NRHP evaluation of the other identified archaeological features resulted in, Feature 11 (Flagpole base), Features 23-25 (Master Pits I, II, and II), Features 32 and 36 (Rock Stockpiles from Master Pits I and II), Feature 44 (Ruth DeEtte Simpson Memorial), and Feature 55 (Crew Steps) being considered contributing elements to the site, eligible for listing in the NRHP under criteria A, B, and C (See Table 1 for features). Many of the contributing elements of the site and are not part of the proposed remedies and would remain untouched and left in place. The proposed action includes Features 23-25 (Master Pits I, II, and II) but only cover these features to remediate human health and safety concerns through installation of air grates and cupolas that still allow viewing by public land users and access to authorized individuals and or wildlife. The proposed remedies would not damage the pits and are easily removable if needed, thus not causing



significant effects.

### 3.3.3 Cumulative Effects

Construction and completion of remedy activities from the proposed action would not result in an adverse cumulative effect to current resources that qualify as historic properties nor any cultural resources as the scale of work is limited to a confined area and specific features. Further, any reasonably foreseeable effects that have a reasonably close causal relationship to the proposed action are not expected as the proposed action is not tied to any other known projects. Regardless, mitigation measures CEMS-CUL-1 through CEMS-CUL-3 will mitigate any unknown impacts such that they would not be adverse.

### 3.3.4 Mitigation

- **CEMS-CUL-1** Prior to earth moving activities, the Independent Contractor shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The Independent Contractor shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.
- **CEMS-CUL-2** In the event of the unanticipated discovery of archaeological materials, the Independent Contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. If the find is determined to be potentially significant, the archaeologist, in consultation with the Bureau of Land Management (BLM) shall develop a treatment plan. Construction shall not resume until the treatment plan has been implemented and completed, and authorization has been granted by the BLM.
- **CEMS-CUL- 3:** If human remains are encountered unexpectedly during any ground-disturbing activities, all work within a minimum of 200 feet of the remains must cease immediately, nothing disturbed, and the area is to be secured. San Bernardino County Coroner's Office shall be called by the Independent Contractor. The Coroner has two working days to examine the remains after notification. Since CEMS is federal land, the federal land managers at BAFO federal law enforcement, and federal archaeologist are to be informed as well because of complementary jurisdiction issues.
  - The Coroner will determine if the bones are historic/archaeological or a modern legal case. If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area. After the Coroner has determined the remains are archaeological or historic and there is no legal question, the BAFO Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 *Inadvertent discoveries*, must be followed.

- The activity that resulted in the discovery of human remains may resume at any time that a written, binding agreement is executed between the BLM, lineal descendants, and/or the federally recognized affiliated Indian Tribe(s) that adopts a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following 43 CFR §10.3 (b)(1) of these regulations. The disposition of all human remains and NAGPRA items shall be carried out following 43 CFR §10.6.

### ***3.3.5 No Action Alternative***

Under the No Action Alternative, the proposed action would not occur and no physical change to existing archaeological or built environment resources would result. As such, the No Action Alternative would have no adverse direct or indirect effects on cultural resources. No significant impacts related to adverse effects on cultural resources would result.

## ***3.4 Special Designation***

### ***3.4.1 Affected Environment***

The CEMS occupies two special designated areas, the Calico Early Man Site ACEC and the Superior-Cronese ACEC. The Nationally Significant Values the Superior-Cronese ACEC provides is high density Desert Tortoise habitat and encompassed designated desert tortoise critical habitat as well as providing a critical tortoise habitat linkage. Per the DRECP, the Calico Early Man Site ACEC is not subject to a disturbance cap.

The Calico Early Man Site ACEC is internationally recognized for its values to scientific research into the question of Early Man in the Western Hemisphere. The management goal of the CEMS ACEC is to manage the cultural resource values associated with the Calico Site for the purpose of scientific research into questions dealing with human occupation and settlement of the Western Hemisphere. To provide and maintain appropriate recreational opportunities for the general public at the Calico Site that serve to increase understanding and appreciation of human prehistory and archaeological techniques.” The ACEC is 830 acres with no disturbance cap.

### ***3.4.2 Environmental Impacts- Proposed Action***

The impact, of the whole Proposed Action, directly effects the CEMS ACEC and indirectly effects the adjacent Superior-Cronese ACEC as desert tortoise are potentially occurring in the Action Area. Yet, impacts will be minimal to the ACECs as work would be limited in duration (over the course of approximately three to four weeks) and work will occur on already disturbed areas and limited to specific features.

### ***3.4.3 Cumulative Effects***

Construction and completion of remedy activities from the proposed action would not result in an adverse cumulative effect to Calico Early Man Site ACEC or the Superior-Cronese ACEC. Any reasonably foreseeable effects that have a reasonably close causal relationship to the Proposed Action are not expected as the Proposed Action is not tied to any other currently known projects.

### ***3.4.4 Mitigation and Residual Impact***

No mitigation measures are required.

### ***3.4.5 No Action Alternative***

The no action alternative would not affect any Special Designation or Land Planning Designation, as no changes would be made to the project area relative to existing conditions. The No Action Alternative would have no adverse direct or indirect effects on the Calico Early Man Site ACEC and the Superior-Cronese ACEC.

## **4.0 Consultation and Coordination**

### ***4.1 Summary of Consultation and Coordination***

Section 106 letter was sent on April 12, 2021 and consultation with the State Historic Preservation Office (SHPO) is ongoing. Letters were sent to San Manuel Band of Mission Indians, Twentynine Palms Band of Mission Indians, and Morongo Band of Mission Indians. Two responses were received by the San Manuel Band of Mission Indians, and Morongo Band of Mission Indians. and consultation is ongoing.

ESA Section 7 consultation with the USFWS concluded on June 30, 2021. The USFWS concurred with the determination that the proposed action may be implemented under the auspices of the Biological Opinion for Activities in the California Desert Conservation Area (FWS- KRN/SBD/INY/LA/IMP/RIV-17B0532-17F1029).

### ***4.2 Public Participation***

The EA will be posted on BLM's ePlanning website and concurrently be subject to public review in July 2021. Substantive comments received during the 30-day public comment period will be used in the decision-making process by BLM.

## **5.0 List of Appendices**

*Appendix A—List of Preparers*

*Appendix B—Acronyms and Abbreviations*

*Appendix C—List of References*

*Appendix D—Figures*

*Appendix E- Worker Safety Plan*

## **Appendix A: List of Preparers**

Name	Title	Responsible for the Following Section(s) of this Document
Jeremy Vargas (Project Lead)	Planning & Environmental Coordinator	Introduction, Proposed Action
Sterling White	Environmental Protection Specialist	Proposed Action
Chris Otahal	Wildlife Biologist	Biology and Wildlife
Shearer, James	Archaeologist	Cultural Resources
Jamie Livingood	Geologist	Public Safety
Jeffery Childers	Associate Field Manager – Resources Branch Chief	Air Quality and Special Designation

## Appendix B: Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
BAFO	Barstow Field Office
CEMS	Calico Early Man Site
CDCA	California Desert Conservation Area
CDNCL	California Desert National Conservation Lands
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act of 1976
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PUF	Polyurethane Foam
USFWS	U.S. Fish and Wildlife Service

## Appendix C: List of References

2020, *Documentation and Evaluation of the Calico Early Man Site, San Bernardino County, California*, Unpublished report submitted to the Bureau of Land Management, Barstow Field Office, Barstow, California.

“Management Plan for the Calico Early Man Site: An Area of Critical Environmental Concern”, U.S. Bureau of Land Management, US Department of Interior, November 1984.

## Appendix D: Figures



*Figure 1-Regional Location of Calico Early Man*



*Figure 3- Example of Air Grate used at a Similar Site*





*Figure 4- Construction of a Cupola over a Mine. Similar to the one in the Proposed Action*



*Figure 5- Large Cupola Example with An Access Door Similar To The Proposed Remedy Over The Main Pit*





Figure 6- Example of Polyurethane Foam ((Puf) Being Poured into An Abandoned Mine Shaft



## Appendix E: Worker Safety Plan

Mitigation and protective measures are created to lessen the threats to the environment and the workers perform the proposed remedies. Mitigations are employed to lessen any possible significant impacts and prevent the damage of unforeseen accidents to the environment. Protective measures will be enforced to lessen the inherent danger and harshness of the environment at CEMS.

The project manager is responsible for implementing the Health and Safety Plan (HASP), including adhering to mitigation and protective measures contained therein. The HASP identifies actual and potential site hazards. Project personnel are NOT required to work in surroundings or under conditions that are dangerous to their health and safety. The project manager shall ensure personnel receive project-specific (and job-specific) health and safety training before starting any activities. The project manager may delegate individual daily responsibilities, but ultimately is still responsible for the entire project.

### Hazard Assessment:

The following hazards have been identified due to natural site conditions:

- Biologicals, including snakes and spiders (bites), and soil containing spores
- Physical, including uneven terrain, sunshine, and heat (heat exhaustion, stroke, stress, sun exposure, dehydration)
- Rugged outdoor conditions (scrapes, sprains)
- Manual materials lifting (sprains, strains)
- Heavy equipment navigation/movement

- Noise exposure
- Crushing/ pinching injuries
- Materials in eyes and lungs (potential asbestos fibers from wallboard and other suspect materials, soils dust)

**Mitigation Measures:** The following measures will be taken to reduce the potential adverse conditions listed above. If the measures are not being followed, work will stop until the condition is corrected.

1. Before assigning daily tasks, **tailgate safety meetings** will be held. Discussion will include:
  - Tasks to be performed.
  - Time constraints (e.g., rest breaks).
  - Hazards that may be encountered, including the effects, how to recognize or monitor symptoms, and danger signals.
  - Emergency procedures.
  - Radio communication.
  - Injury reporting procedures.
2. **Field Attire.** Hard hats are required within 25 ft. of heavy equipment and where there is an overhead hazard; otherwise, a broad-brimmed hat is recommended. Closed-toe shoes with ankle protection are required on-site. Shirts with at least a 2-inch sleeve are required due to the likelihood of extreme sun exposure. No clothing or jewelry will be dangling so as to get caught on any moving equipment. It is recommended workers apply sunscreen throughout the day.
3. **Training.** Project personnel will be informed of the hazards, mitigation measures and procedures identified in the HASP.
  - a. All site personnel will receive site-specific safety training consisting of a review of the Health and Safety Plan, information on chemical, radiological, and other potential hazards at the site and emergency procedures prior to entering any active work areas.
  - b. Personnel will be certified in Heavy Equipment operation and will possess a Commercial Driver's License to transport Heavy Equipment on public highways.
  - c. The project manager is responsible for ensuring appropriate training/certification documentation for each employee is present at the job site.
  - d. Copies of all safety data sheets for hazardous chemical materials that are used during site operations or that are present on-site will be available from the Project Manager on site. Employees will be trained to meet the Hazard Communication Standard (29 CFR1910.1200).
  - e. Containers brought on site will be labeled as to content and hazardous nature of the product (as per DOT and OSHA).
4. **Personal Protective Equipment (PPE).** Selection will be modified if project conditions change. Long pants, long sleeves, and safety boots complying with ANSI Z41 (meeting I/75 Impact and C/75 for compression standard for the protective toe box) are required for personnel working within 25 ft. of the house and mining structures. Hearing protection is required when within 25 ft of operational heavy equipment or when using power or hand tools creating noise levels above 85 dBA.

As a rule, levels of PPE will be reassessed if any of the following occur:

- Appearance of previously unidentified or anticipated conditions or task hazards.
- Ambient weather conditions change which impact the use of assigned PPE.
- A new task is introduced or a previously assigned and evaluated task is expanded in scope.

5. **Daily Safety Inspections:** The project manager will conduct a site inspection prior to holding the daily tailgate meeting to identify topics for discussion and to ensure the operation is being conducted as per the HASP. Problems identified during the site inspection will be discussed at the tailgate safety meeting. Inspections will include the following areas:

- General Site Safety
  - Housekeeping. Trash is removed from the site at the end of each work day.
  - Communication Equipment is tested daily before work resumes.
  - Personal Protective Equipment is provided and on-site before work begins.
  - Vertical fall hazards are fenced securely and signed before site-reclamation work begins.
  - Project Hazards.
  - Incident Experience. Discuss prevention measures for incidents which occur. Discuss reporting procedures.
  - Sanitation. Ensure containment and supplies are adequate to provide for washing of hands and potable water sufficient for drinking and washing.
- Emergency Equipment
  - Fire extinguisher and First-aid Kit
  - Safety shower/eyewash operability
  - Spill containment and control supplies
- Hazardous Materials
  - Proper storage and segregation
  - Leakage/spillage protection
- Equipment and Tools
  - Vehicle Operation
  - Heavy equipment
  - Power & Hand tools

Any problems in implementation of the Health and Safety Plan will be reported immediately to the Project Manager, and work will not proceed until all deficiencies have been corrected. As appropriate, this may include additional training, closer supervision, or disciplinary action.

6. **Emergency Procedures and Medical Response:**

- The Project Manager will be the on-site emergency coordinator in case of an accident or incident requiring emergency response. The Project Manager is responsible for maintaining a first aid treatment log of all first aid administered, regardless of severity.
- No one will work alone at the site.
- Emergency contact telephone numbers will be posted and kept readily available. All personnel will be briefed on the site emergency procedures and will know the location of the cellular telephones and other on-site communications devices.

- At least one person certified in First Aid/CPR will be on site at all times to provide immediate response to an accident situation until medical assistance arrives on the site. Indoctrination to the bloodborne pathogens standard [29 Code of Federal Regulations (CFR) 1910.1030] will be provided to project personnel either during their first aid training, and/or during the initial site health and safety meeting.
- 7. **Visitors.** The Project Manager will provide visitors initial awareness of the hazards of the site. The visitor shall always remain with a site-knowledgeable person during the visit.
- 8. **Emergency Equipment.** First aid kits for the treatment of minor injuries and burns will be maintained. At least one full kit meeting American National Standards Institute (ANSI) Z308.1, *Minimum Requirements for Industrial Unit-Type First Aid Kits*, will be provided at the site. This basic kit shall include:
  - a. Absorbent compress (32 square inches, with no side smaller than 4 inches)
  - b. Adhesive bandages
  - c. Adhesive tape
  - d. Antiseptic applications (0.5 gram per application, total 0.14 fluid ounces)
  - e. Burn treatment applications (0.5 gram per application, total 0.14 fluid ounces)
  - f. Two pairs of medical exam gloves, and two additional pairs of latex gloves
  - g. Sterile pads (3 by 3 inches)
  - h. Triangular bandage (40 by 40 by 56 inches)
  - i. Mouth protective valve for CPR
  - j. Disinfectant
  - k. Biohazard disposal receptacle

The following general emergency equipment will be available at the site at all times:

Fire Extinguisher

At least one 2-A:40-B in addition to one small FE in each transport vehicle and piece of heavy equipment

Emergency Eyewash UL approved for corrosive incident response

9. **Site Map:** A site map will be available to inform the workers of the location of hazardous areas on the site, the assembly areas to be used in the event of a site evacuation, and any other information relevant to the project's activities.
10. **Communications:** On-Site and Off-site communication by cellular phones/ dispatch communications will be confirmed by an actual test from the project site before beginning any hazardous activities, such as earth moving. On-site communications will include hand signals, or on-site cellular phone / FM two-way radio.

The following Hand and Audible Signals will be used when necessary:

Thumbs up:	"OK, I'm all right, I understand"
Thumbs down:	"No, negative"
Pointing to ear(s):	"Can't hear, don't understand"
Waving hand(s) over head:	"Need assistance now"
Pointing to eyes then to a person/object:	"Watch person/object closely"
Point to emergency exit route with both hands	"Evacuate site now"

## 11. Emergency Services

## Telephone Number

Emergency Dispatch	911
HAZMAT Emergency Communications Center	800-424-9300

### California

Federal Interagency Communication Center	888-233-6518
	909-383-5651
California Highway Patrol (Barstow)	760-256-1727
Barstow Community Hospital	760-256-1761

12. **Biological Hazards:** There are numerous biological hazards such as plants, snakes, insects, and spiders which may be encountered. Workers shall look for these hazards as they work, shall use gloves when reaching into tight areas, and shall wear long pants where snakes may be hidden. Avoid contact with any plants or animal excreta. Wash hands well if these are encountered.
- Snakes will be most likely in and around the rocks where the project is occurring. The Mojave rattlesnake and Desert sidewinder are likely. If you encounter a snake, stay calm and still. If you are bitten DO NOT make an incision, apply suction, apply a tourniquet, or run for help! Stay calm. Transport quickly to a medical facility. Hold the bite lower than the heart. Ice the area if swelling or color change occur. If possible, bag the snake and bring it for positive identification.
  - Lyme disease and Rocky Mountain Spotted Fever are caused by bites from infected ticks. Inspect for ticks daily. Symptoms begin as flu like chills, fever, headache, stiff neck, etc. Typically, a tick must remain for more than 24 hrs to transmit the disease. If you think you have been bitten, seek medical treatment. Prevention included application of DEET, wearing light colored clothes, wearing long pants and socks when in heavy weeds, and checking yourself after having been in a tick-area.
  - Bees, wasps, scorpions, fire ants, and etc. may be encountered, but not anticipated. Personnel with known reactions to these will inform the project manager upon assignment to the project. Where needed, additional training in emergency treatment for these personnel may be provided.
  - Rats, mice, and bats may carry rabies and other diseases. Hantavirus is common in rodents and their droppings. Soil excavation of contaminated soil may distribute the virus in air. Where rodent droppings are found, it is recommended the area be sprayed with diluted bleach and water or dust respirators be worn.
  - Valley fever is an upper respiratory infection common in the Southwestern US. Fungal spores may be airborne when soil is disturbed by winds, construction, etc. Symptoms usually manifest within 3 weeks of exposure and may be like the flu, fatigue, cough, chest pain, fever, rash, headache, and joint aches. Valley fever is not contagious and can be diagnosed with laboratory tests.
13. **Physical Hazards:** Slip, trip, and fall hazards are ubiquitous in the project area. Attention will be paid to stepping hazards from debris such as nails. When heavy equipment is moving dirt, boulder, attention will be paid to higher elevation where large boulders may become dislodged. Workers will not be permitted to work below when this hazard is a possibility.

- a. Electrical storms and resulting lightning occur in the project area. Activities will be suspended when lightning is seen, and thunder occurs within 5 seconds of that lightning. This would indicate the storm is about 1-mile away.
- b. Flash flooding is possible in the project area. Project personnel will be aware of weather reports on a daily basis. An area for evacuation will be determined at the onset of the project.
- c. Asbestos containing materials may be found during the clean-up of debris. Wallboard, floor tile, and canvas-like fabric may contain asbestos. These materials are non-friable and will not be further degraded by “smashing”, grinding, or other means. The materials will be wetted (fine water spray) and segregated from other construction debris and placed in marked plastic bags (double). Workers will have received asbestos awareness training prior to working around potential asbestos containing materials. No visible emissions shall be observable due to work with these materials. Wearing of a dust mask is recommended when working closely with suspect materials.

14. **Heat Stress:** Heat stress is one of the most common and potentially serious illnesses affecting personnel working in a desert environment. Heat stress can result in health effects ranging from transient heat fatigue to death. Sweating is the body’s way of releasing body heat; but sweating does not cool the body unless the moisture can be removed from the body. If moisture cannot be removed as rapidly as the body temperature is increased, body temperature will increase. If water is not replaced as fast as it is released through cooling, the body cannot cool efficiently, and a medical emergency will follow. Heat stress disorders include heat rash, fainting, heat cramps, heat exhaustion, and heat stroke. The following mitigation methods will be used to minimize the risk for heat-related disorders during this project:

- a. Sufficient potable water, or an electrolyte replacement solution, will be brought to the site in a “community” water container each day that each person will be able to drink at least 24 ounces per hour during heavy work intervals. Workers will be encouraged to drink at least every 20 minutes during heavy exertion intervals.
- b. Workers are considered acclimatized when they have worked under similar conditions for 5 of the last 7 days, and for at least two weeks prior to this project. Non-acclimatized workers will require additional time to rest and recover.
- c. Portable shade units will be erected when possible.
- d. Work will be accomplished during early morning hours. Work will be avoided from 11am – 3 pm during the summer.
- e. When the ambient temperature exceeds 98°C, less than 30% humidity, and the worker has direct sun exposure, work-rest regimen will be implemented beginning at 15 min. rest and 45 min. work. As the temperature and humidity increase, the rest time will be extended.
- f. Cooled water vests and other means to cool workers will be used as possible.
- g. Workers will stop work when dizziness, fatigue, headache, or other symptoms are noted indicated a heat stress disorder is occurring.

15. **Equipment Hazards:** The following mechanical hazards are associated with this project: Moving trucks, forklifts, all-terrain vehicles; Operation of heavy equipment; Use of hand tools (picks, shovels, etc.) Hard hats and steel-toed shoes are required for personnel working near heavy equipment. PPE such as heavy-duty work gloves and hearing protection may be required for specific tasks. The Project Manager has the authority to upgrade PPE requirements at any time based on changing site conditions and work activities.

The following safety precautions will be followed in order to minimize the possibility of injury by mechanical hazards:

- a. Heavy equipment will be operated under OSHA regulation. The operators will be certified on each piece of equipment they will operate.
- b. An observer will be used when heavy equipment is being repositioned to ensure visibility and safety of personnel. Bystanders will not stand within the swing radius of backhoe buckets or near-earth moving equipment.
- c. Daily equipment check of safety devices will be done. Heavy equipment shall have an audible backup alarm. Non-essential equipment shall be removed from the cab or secured. A seat belt must be worn.
- d. Establish eye contact with heavy equipment operators before crossing their path.
- e. Proper lifting technique and “buddy” lifts will be used to prevent back strain/injury.
- f. Hand tools will be inspected daily before use. If damage is present, the tool will be repaired before use.
- g. When equipment is used to move a heavy load, a “tag” line and visual signals will be used.
- h. During moving of equipment, there will be a spotter to assist, and all personnel will be forewarned about the relocation. Barrier tape will be used once the equipment is placed to keep personnel out of the way of the equipment.
- i. No one is allowed to “ride” equipment other than the operator.
- j. The donning of hearing protection is required when operating or guiding heavy equipment, or when within 25 ft. of the equipment when operating.
- k. There are no underground utilities in the project area.
- l. Employees are not permitted to stand or work under loads being handled by heavy equipment.
- m. Workers are required to stand away from vehicles being loaded or unloaded to protect them from being struck by any spillage or falling materials. Operators to remain inside cabs of heavy equipment.

16. **SPILL CONTAINMENT:** Spills will most likely be petroleum based solid materials and domestic garbage. Spills of petroleum-based material will be immediately shoveled into drums. A spill report will be completed by the Project Manager for all spills exceeding one pint. A Spill Prevention Control Plan (SPCP) is part of this EA to help reduce the possibility of spills.

Hydrophobic Petroleum Absorbent Pads capable of absorbing petroleum (fuels/oils) would be required to be immediately available during events. Shovel would be required to be immediately available for diking to prevent the spread of the contamination and for cleanup of releases. Containers for holding contaminated absorbent pads and soils would be required to be available during events. Containers will be of a size capable of containing the wastes consistent with the volume of fuels/oils brought to the site.

#### **DIRECTIONS AND MAP TO NEAREST EMERGENCY MEDICAL FACILITY**

##### **Directions to Barstow Community Hospital (Map to be provided):**

- Get on I-15 S. by heading south toward Sunrise Canyon Rd for 2.0 mi. Then turn right onto Sunrise Canyon Rd for 0.5 miles and turn right to merge onto I-15 S, 0.3 miles.

- Follow I-15 S for 13 miles to exit 184 for E Main St toward Needles/I-40, .2 miles, and keep right at the fork to follow signs for Downtown/I-15B, 0.1 miles. Merge onto I-15 BL N/E Main Street, 0.1. miles
- Turn left onto E Mountain View St, 0.6 miles, turn left, 200 ft, and turn right, 100 ft, turn right, 450 ft towards your destination.

## **Spill Prevention Control Plan Objectives**

The purpose of this Spill Prevention Control Plan (Plan) is as follows:

- To identify all pollutant sources that may exist within the CEMS.
- To identify BMPs to prevent or reduce the quantity of potential pollutants discharged to the ground or surface water in order to minimize environmental impacts during and after the exploration project.

## **Availability**

A copy of the SPCP shall be attached to the Project's Operating Plan, along with the Safety Data Sheets (SDS) for products used in vehicles, equipment, drilling and maintenance. All contractors are responsible for familiarizing their personnel with the information pertaining to spill prevention.

## **Preventative Maintenance**

The following good housekeeping practices will be implemented onsite during the Proposed Action:

- Material storage will be restricted to the amount required to do the job.
- Materials will be stored in a neat, orderly manner in their appropriate containers.
- Materials will be kept in their original containers with the original manufacturer's label.
- Manufacturer's recommendations for proper use, storage, and disposal will be followed.
- The Project Coordinator will inspect the working areas daily to ensure proper use, storage, and disposal of materials onsite.

All contractors shall have a vehicle preventive maintenance program to ensure that all vehicles are operating under optimum conditions and all hoses and fittings are in good condition and leak-free. It is the responsibility of the operator, mechanic, tool pusher or other designee, to execute the repairs or preventive maintenance and complete any reporting required.

## **Source Identification**

**Pollutants** - Potential sources of pollutants from drilling rigs, service vehicles, and other equipment include oil, fuel, lubrication grease, coolants, and hydraulic fluids. Additional sources of pollutants may include drilling fluids, borehole plugging materials, solvents, trash and other debris. These pollutants are not expected to come into contact with onsite soils or surface waters; however, Best Management Practices (BMP) shall be employed to prevent potential release of contaminants.



**Debris** - To minimize impacts during precipitation events, trash bins shall be regularly inspected for leaks.

**Spill Contingency Plan** - Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, sorbent materials, sand, sawdust, and plastic and metal trash containers specifically for this purpose. The recommendations in the respective SDS will be strictly followed.

Well-maintained equipment will be used to perform the work. As much equipment maintenance will be performed offsite as possible. In the event of oil, fuel, and lubricating grease leaks, cleanup will be conducted as soon as possible. If the leak is on pavement or a compacted surface, an oil absorbing product such as Absorb® will be applied. Once the cleanup product has absorbed the leak, it will be swept up into watertight drums or bins, and disposed of according to federal, state, or local regulations. If the leak occurs on soil, the contaminated soil will be removed and disposed of according to federal, state, or local regulations. In the event of a major spill, the following actions should be taken, in addition to any federal, state, or local health and safety regulations:

1. Contain the spread of the spill using onsite erosion control structures and/or by creating dirt berms as feasible and necessary, and utilize materials and equipment stored onsite to control the spill.
2. Notify the Environmental or Project Coordinator immediately.
3. Within 24 hours of an identified spill, the Project Coordinator or a designated representative will notify the following local and state agencies:
  - a. BLM Barstow Office – 760-252-6000
  - b. California Environmental Protection Agency – 916-325-2514

In case of an emergency relevant phone numbers are provided below:

- a. Emergency calls – 760-256-4838 (San Bernardino County Sheriff, Barstow)
- b. Fire – 760-256-2554 (Barstow Fire Protection District)
- c. Hospital – 760-256-1761 (Barstow Community Hospital)

If there is a spill, this Plan will be adjusted to include measures to prevent that type of spill from recurring and how to clean up the spill should it occur again. A description of the spill, what caused it, and the cleanup measures will also be included.

## **Definitions of Physical Hazards**

### **Trench and Excavation Safety**

#### **Definitions**

Section 1540 of the California Code of Regulations defines an excavation as "any manmade cut, cavity, trench, or depression in an earth surface, formed by earth removal". This section also defines a trench as "a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less (measured at the bottom of the excavation), the excavation is also considered to be a trench."

### **Evaluation of Hazards**

The stability of trench and excavation walls must be evaluated by a geologist/engineer or other competent person having, by virtue of training or experience, the knowledge needed to identify existing and predictable trenching and excavation hazards. The competent person must also have the authority to promptly correct or eliminate any hazard that is observed. The presence of underground utilities must be determined before excavating.

### **Reducing Trench and Excavation Hazards**

All personnel should minimize their time spent in trenches and excavations. A "buddy system" must be used whenever anybody enters a trench or excavation. Only one employee at a time will be allowed in a trench or excavation. An observer will be stationed at one end (not the sides) of the trench or excavation. Rescue equipment and the equipment operator will remain at the trench or excavation "in the ready." Site personnel will not be allowed to stand closer than two feet from the edge of a trench or excavation, since they may collapse. No one should enter a trench or excavation while heavy equipment is working on the trench or excavation. Excavated soils, materials, and equipment must be kept at least two feet from the edge of a trench or excavation.

### **Sloping, Shoring, And Benching Design**

Excavations or trenches which are 5 feet or greater in depth, into which personnel are going to enter, will be sloped, shored, or benched (unless the trench or excavation is entirely in stable rock) as designed by the competent person. The sides of a trench or excavation will be sloped or benched to a stable angle (8 CCR 1541.1, Appendix B). The shoring of a trench or excavation must be designed by a State of California Registered Civil Engineer or be installed according to manufacturer specifications and under the supervision of a competent person. The equipment operator will construct escape ramps or steps at the ends of trenches or excavations, with ladders placed at 25-foot intervals along the sides of trenches. The protective system will be inspected at least daily by the competent person. Workers are not permitted to enter any trench or excavation unless and until it has been properly inspected and the workers are properly protected.

### **Trench and Excavation Egress**

For trenches or excavations four feet or more in depth, a stairway, ladder, ramp, or other safe means of egress must be provided, so as to allow for no more than 25 feet of lateral travel by employees. The ladder must be securely anchored at both ends and extend for at least three feet above the ground surface. For trenches or excavations deeper than six feet and wider than 30 inches, walkways or bridges with guardrails will be required whenever employees must traverse over trenches or excavations.

### **Surcharging and Stability of Structures**

Spoil piles and equipment must never be located any closer than two feet from the excavation face. When the stability of adjacent structures (buildings, walls, etc.) is endangered by trenches or excavations, support systems such as shoring, bracing, or underpinning will be used.

### **Other Hazards**

Workers should be instructed not to enter a trench or excavation whenever water or chemicals are flowing or seeping into the trench or excavation, or the trench or excavation contains standing water or saturated materials. Trench and excavation hazards must be reevaluated after a rainstorm. This should include a thorough inspection for animals (snakes, spiders, rodents, etc.) before any workers are allowed to enter. Hearing protection should not be worn in a trench or excavation, since it may limit communications. Noise sources which impair communications should be controlled or eliminated. Hazardous objects such as loose rocks or boulders should be removed from the area around trenches and excavations. Protection from

falling rocks and other objects must be provided by removal, barricades, or fences.

### **Covering and Backfilling**

All trenches and excavations must be barricaded.

Underground utility lines must be identified before any removal of sediment begins.

### **Mechanical Hazards**

The following mechanical hazards are associated with this project:

- Moving trucks, forklifts, all-terrain vehicles, etc.
- Operation of heavy equipment
- Use of hand tools (picks, shovels, etc.)

The following safety precautions should be followed in order to minimize the possibility of mechanical hazards:

- All equipment operators must be trained in the use of specific equipment utilized in the work. Current equipment operator certifications are required.
- Do not stand within the swing radius of backhoe buckets or near-earth moving equipment.
- Verify that all equipment is in good condition before using it.
- All heavy equipment must have an audible backup alarm.
- Do not walk under elevated loads.
- Do not stand near unguarded excavations or trenches.
- Always establish eye contact with heavy equipment operators before crossing their path in any direction.
- Cones must be placed at the shoulder for work adjacent to roads.
- Use proper lifting technique to prevent back strain/injury.
- Get assistance for heavy or bulky items.
- Use hand tools as recommended and only for their intended purpose.

### **Heat Stress Hazards**

Heat stress-related disorders are possible at the site because of elevated ambient temperatures during the warmer months of the year and the use of personal protective clothing.

The following safety precautions should be followed in order to minimize the possibility of heat stress-related disorders:

- Know the signs and symptoms of heat stress-related disorders and look for them in co-workers.
- Outdoor work activities should begin as early as possible in the day.
- Take frequent rest breaks in shaded areas and unzip or remove protective clothing.
- Drink small amounts of water or electrolyte replenishment fluids frequently (6 to 8 ounces every half hour) to avoid dehydration. It is very important to hydrate before starting a work shift.
- Limit or curtail the intake of alcoholic and caffeinated drinks whenever working under heat stress conditions.
- Maintain good physical conditioning.
- Get plenty of rest before starting work.
- Avoid eating a heavy or greasy noon time meal since this will increase metabolic heat production and body core temperature and may upset the stomach.
- Put a cold water-soaked handkerchief or towel under your hard hat.

Anytime that the outdoor temperature exceeds 75 °F, the project health and safety officer (PHSO) will monitor the wet bulb globe temperature (WBGT) index on an hourly basis using a direct reading

instrument that provides wet bulb, dry bulb, and globe temperatures. Heat stress guidelines from the American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Values (TLV) booklet will be used for the duration of this project to interpret WBGT measurements and determine appropriate work-rest regimens. These guidelines are summarized in Table 3-3 below. The guidelines will be applied according to the instructions and interpretations contained in the TLV booklet.

Table 3-3. Heat Stress Index Guidelines (WBGT)

Work - Rest Regimen	Work Load		
	Light	Moderate	Heavy
Continuous work	86 °F	80 °F	77 °F
75% work - 25% rest each hour	87 °F	82 °F	78 °F
50% work - 50% rest each hour	89 °F	85 °F	82 °F
25% work - 75% rest each hour	90 °F	88 °F	86 °F

Note: Guidelines for determining work loads for various work activities can be found in the TLV booklet.

### Cold Stress Hazards

The effects of working in cold environments depend upon a variety of factors such as air temperature, wind speed, duration of exposure, type of protective clothing and equipment, type of work, level of physical effort, and health status of the worker. In some cold environments, overexposure can cause serious effects on the body. Some general guidelines for minimizing the effects of cold temperatures are summarized below.

- Wear multi-layered, loose-fitting cold weather clothing. The outer layer of clothing should be made of wind-resistant fabric. The inner layer of clothing should be made of cotton or other absorbent material.
- When temperatures are between 0 °F and 30 °F, total outdoor work time will be limited to 4 hours per day. No outdoor work will be permitted when temperatures are below 0 °F.
- Drink warm fluids at least once per hour.
- Take 5-to-10-minute rest breaks every hour inside trailers, vehicles, or other warm areas.
- Use the "buddy system" for all outdoor work in cold weather.
- Avoid heavy sweating. Remove and replace any clothing that becomes moist from sweating.

### Noise Hazards

Noise hazards may be associated with operations taking place near compressors, generators, or other noisy equipment. Based on prior experience and preliminary noise measurements, the expected maximum noise levels near this equipment may reach 95 dBA.

The following safety precautions should be followed in order to minimize the possibility of exposure to noise hazards:

- All field personnel should be familiar with noise hazards associated with heavy equipment. If equipment operators have not received this instruction during their 24 or 40 hours of OSHA training or subsequent refresher classes, the PHSO will train them on noise hazards during their initial site-specific safety and health training or during a tailgate safety meeting.
- All employees will be given hearing protection devices to use whenever noise exposure levels exceed 90 dBA. A good "rule of thumb" for determining when noise levels may exceed 90 dBA is that

persons must raise their voices in order to carry on a conversation when they are at a distance of two feet from each other.

### **Confined Space Entry**

Any trench which is 4 feet or more in depth is considered to be a confined space. Engulfment hazards in trenches and other excavations will be eliminated by sloping, shoring, or benching in order to make them non-permit required spaces.

### **Communication Methods**

On-site communication methods will consist of verbal communications, two-way field radios, and hand signals as required. Off-site communication methods will consist of the use of cellular phones. Emergency communication regarding potential off-site situations such as approaching severe weather or flooding that may pose a danger to site personnel are the responsibility of the California Department of Fish and Game. Project personnel must advise the PHSO of all such potential danger situations in sufficient time to ensure the safety of site personnel.

### **Levels of Protection Authorized For Site Activities**

Based on air monitoring results from similar activities, the nature of work activities, the potential for airborne dust generation and other relevant factors, the PHSO will determine the appropriate level of personal protective equipment (PPE) for various site activities. PPE assignments for work activities will be evaluated by the PHSO on a case-by-case basis.

The use of hard hats will be required for heavy equipment operators and all personnel working in the vicinity of heavy equipment as well as other areas where overhead hazards pose the risk of head injury. Hard hats will also be required for all work inside exclusion zones regardless of the level of PPE used. Steel-toed shoes or boots and safety glasses with side shields or chemical goggles will be required for all site activities. Additional PPE such as heavy duty work gloves or hearing protection may be required for specific tasks. The PHSO has the authority to upgrade PPE requirements at any time based on changing site conditions and work activities.

### **Spill Containment**

Any spills at this site would most likely consist of solid materials only. All spills of solid material will be immediately shoveled into drums. A spill report will be completed by the PHSO for all significant spills. Level C personal protective equipment is required for personnel involved in spill cleanup.

### **On-Site Safety Training And Tailgate Safety Meetings**

All site personnel will receive several hours of site-specific safety training consisting of a review of the Health and Safety Plan, information on chemical, radiological, and other potential hazards at the site and emergency evacuation procedures prior to entering any active work areas.

In addition, tailgate safety meetings will be conducted for all site personnel by the PHSO each morning prior to the start of work activities. Topics to be covered at the tailgate safety meetings will be dictated by current work activities and conditions. Topics deemed most appropriate by the PHSO in consultation with others at the site will be covered. The primary purpose of these meetings is to keep workers focused on safety and to "work smart" in order to minimize workplace injuries and illnesses.

### **First Aid Equipment And Supplies**

- First aid kits

- Medical oxygen cylinders
- Portable eye wash stations
- Portable safety showers
- Stretchers
- Tool kit
- Thermometers
- Portable Fire Extinguishers